

LEXINGTON, KY.
UNITED STATES SIGNAL SERVICE
MONTHLY WEATHER REVIEW.

VOL. XVII.

WASHINGTON CITY, OCTOBER, 1889.

No. 10.

INTRODUCTION.

This REVIEW is based on reports for October, 1889, from 2,321 regular and voluntary observers in the United States and Canada. These reports are classified as follows: 177 reports from Signal Service stations; 121 monthly registers from United States Army post surgeons; 1,414 monthly registers from state weather service and voluntary observers; 36 reports of rainfall observations in Arizona and New Mexico, furnished by the United States Geological Survey; 25 reports from Canadian stations; 169 reports through the Central Pacific Railway Company; 379 marine reports through the co-operation of the Hydrographic Office, Navy Depart-

ment; marine reports through the "New York Herald Weather Service;" monthly weather reports from the local weather services of Alabama, Arkansas, Colorado, Dakota, Illinois, Indiana, Iowa, the Iowa Weather Crop Bulletin Service, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Meteorological Report of the Missouri State Board of Agriculture, Nebraska, Nevada, New England, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, and Texas, and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR OCTOBER, 1889.

The severest storms of the month occurred along and off the Atlantic coast from the south New England coast to the Carolinas from the 14th to 16th and on the 23d and 24th, when gales of great violence, attaining hurricane force at sea from the 14th to 16th, were reported. Over the north Atlantic Ocean, in addition to the disturbances of the 14th to 16th, 23d, and 24th, referred to, severe gales were reported north and northeast of Bermuda on the 5th, and over mid-ocean on the 16th and 17th. On the 7th destructive gales prevailed over and near the British Isles, and the barometer fell to 28.70 over Scotland. From this date until the 10th stormy weather prevailed in that region, and on the 9th the barometer fell below 28.80 over the more northern parts of Great Britain. The Arctic ice reported near Newfoundland and the Grand Banks was largely in excess of the average amount for the month.

The month was cooler than the average October east of the Rocky Mountains, except in Dakota, Texas west of the ninety-eighth meridian, and at stations in New Brunswick and Nova Scotia. In the Rocky Mountain and plateau regions and on the Pacific coast the mean temperature was above the average for the month. The greatest departures below the average temperature were noted from the middle Atlantic and North Carolina coasts northward over the Lake region, where they exceeded five degrees, and the most marked departures above the average temperature occurred in the northern plateau region and on the northeastern slope of the Rocky Mountains, where they exceeded five degrees. The highest mean temperature reported was 84°.5, at Fort Brown, Tex., and the lowest means were 28°.8, at Dolly Varden Mines, Colo., and 33°.2, at Atlantic, Mich. The highest absolute temperature reported by regular stations of the Signal Service was 106°, at Yuma and Fort McDowell, Ariz. The highest temperature reported by a voluntary observer was 118°, at Indio, Cal. At stations on the southeastern slope of the Rocky Mountains, in Montana, in the plateau regions, along the north and middle Pacific coasts, and at New Orleans, La., the maximum temperature was as high or higher than previously reported for October. The lowest absolute temperature reported by a regular station of the Signal Service was 9°, at Saint Vincent, Minn. The lowest temperature reported by a voluntary observer was -9°, at Pike's Peak, Colo.; at Dolly Varden Mines, Colo., and Weatherford Centre, Vt., a minimum temperature of 0° (zero) was

reported. At Portland, Maine, Fort Smith, Ark., Brownsville, Tex., Oswego, N. Y., Lava, N. Mex., and Fort McDowell, Ariz., the minimum temperature was as low or lower than previously reported for October. Frost injurious to vegetation was reported as far south as North Carolina, South Carolina, and northern Mississippi on the 8th, and in Tennessee and northern Alabama on the 31st. The occurrence of killing frost was about one week earlier than usual in North Carolina and South Carolina; about two weeks early in northern Mississippi, while in Alabama and Tennessee it was seasonable.

The most remarkable feature in connection with the precipitation of the month was the heavy rainfall on the middle and south Pacific coasts, which was the heaviest ever reported in those districts for October. The heaviest rainfall for the month fell in north-central California, where at Sims, Shasta Co., 28.57 inches were reported, and it exceeded ten inches along the Oregon coast, in north-central and northwestern California, and on the California coast between the thirty-fourth and thirty-fifth parallels. No rain was reported within an area extending from north-central Montana into the British Possessions, within areas in the western part of northern Dakota, west-central and south-central Minnesota, central Texas, and extreme southern Louisiana and Mississippi. The rainfall was generally less than the average amount for October in the central valleys, the Lake region, the south Atlantic and Gulf states, over the northeastern part of the northern slope of the Rocky Mountains, the northern part of the northern plateau region, the extreme eastern parts of the middle and southern plateau regions, and in the British Possessions from the Gulf of Saint Lawrence to Vancouver Island. It was generally above the average for the month in New England and the middle Atlantic states, the middle and southern slopes of the Rocky Mountains, the plateau regions, and on the Pacific coast. The greatest departures below the average rainfall occurred on the west Gulf coast, where they exceeded five inches, and the most marked excesses on the middle and south Pacific coasts where, between the thirty-fourth and forty-first parallels, they were more than six inches, and in the Sacramento Valley more than seven inches. At Merritt's Island, Fla., Logansport, Ind., Cresco, Iowa, Harrison, Iowa, Grand Coteau, La., Thornville, Mich., Minneapolis, Minn., Fort Shaw, Mont., Lenoir, N. C., Milan, Tenn., New Ulm, Tex.,